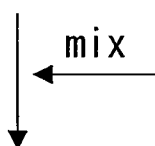
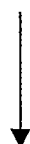
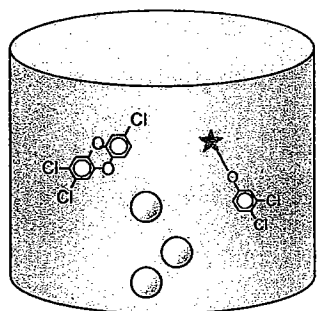


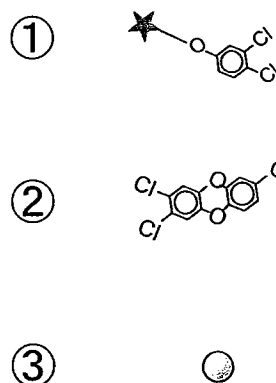
1 ml of 10 mM phosphate buffer solution
(pH 8) containing 20-30% 1,4-dioxane



- ① 1 μ l of 1 μ M NBD-labeled dichlorophenol
- ② 1 μ l of test sample
- ③ 3 dioxin binding peptide beads
- (① and ② are dissolved in 100% 1,4-dioxane solution)



react (15 hr or more)



1. Record fluorescent microscope images of the beads.
2. Conduct tests using a sample of known concentration to create a calibration curve.
3. Determine the concentration of a test substance based on the calibration curve.

Fig. 1

library:

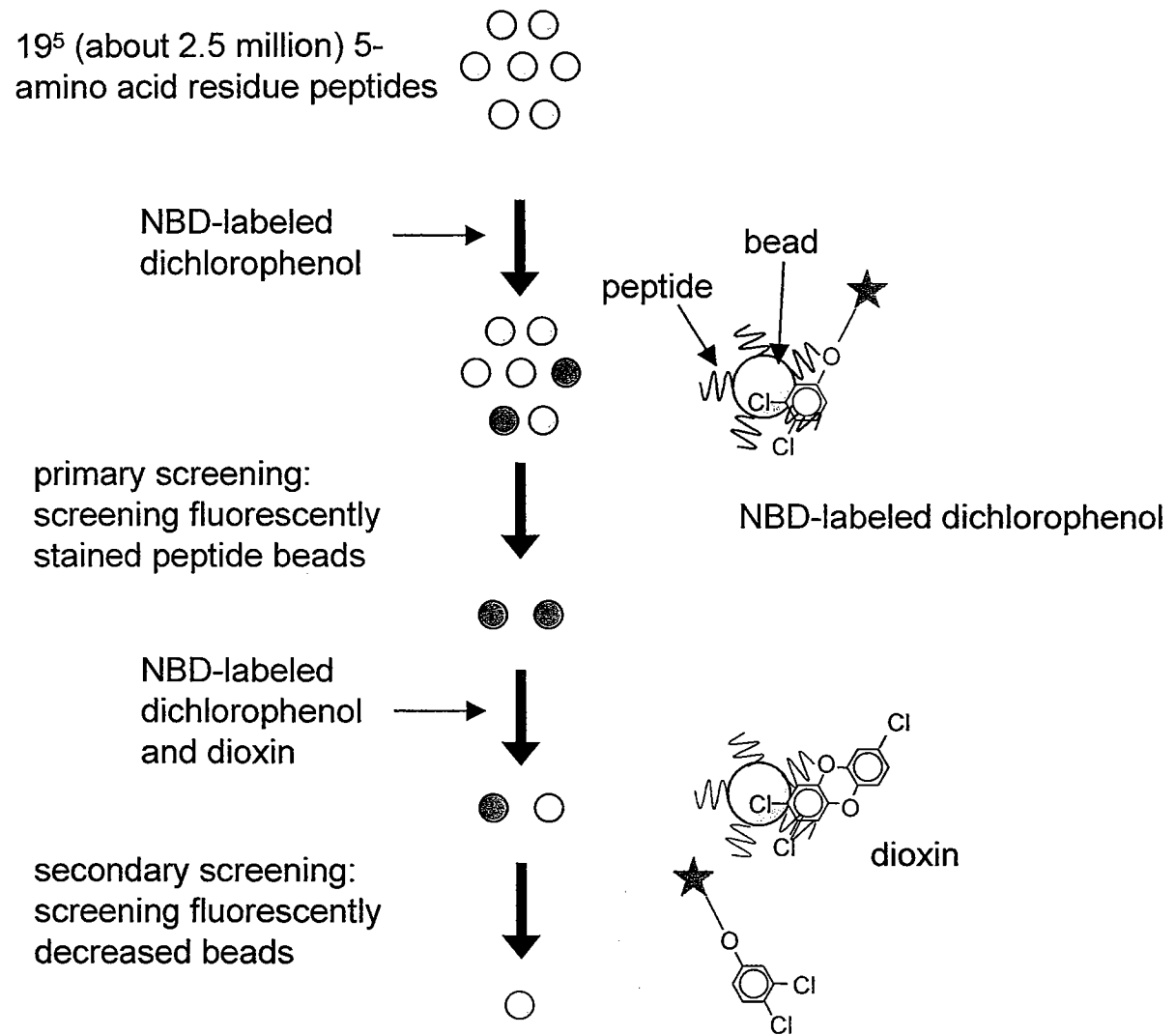
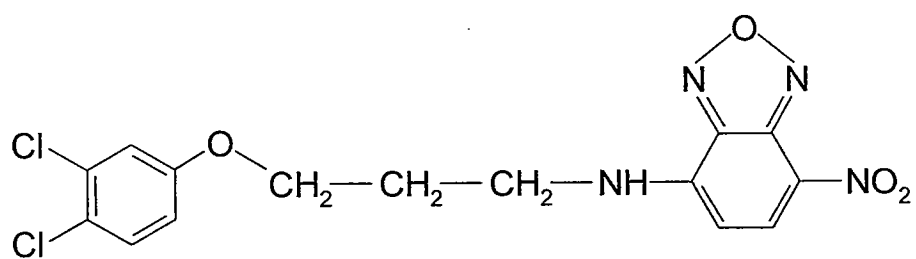
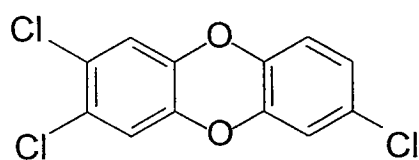


Fig. 2

NBD-labeled dichlorophenol



2,3,7-TriCDD



2,3,7,8-TeCDD

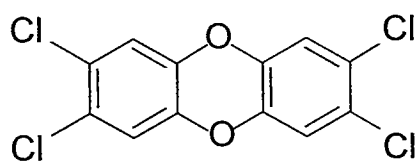


Fig. 3

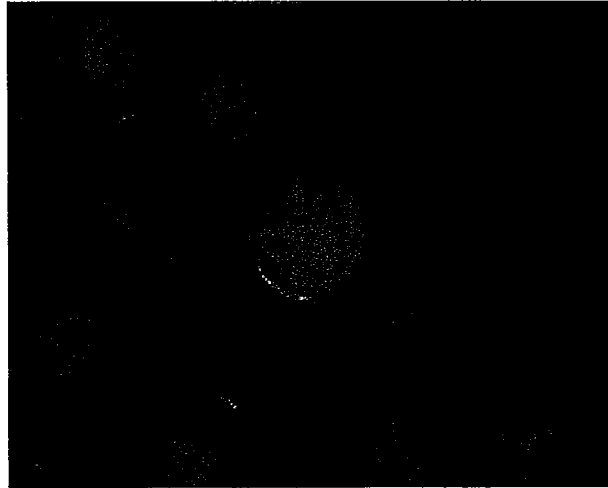


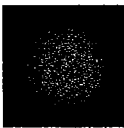


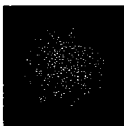


Fig. 4

	Before staining	After staining	After competition
Concentration of NBD-labeled dichlorophenol	0 nM	1 nM	1 nM
Concentration of competitive 2,3,7-TriCDD	0 nM	0 nM	10 nM (10 fold concentration)
DB2			
Reference (*)			

* Beads which were determined as not fluorescently stained in the primary screening

Fig. 5

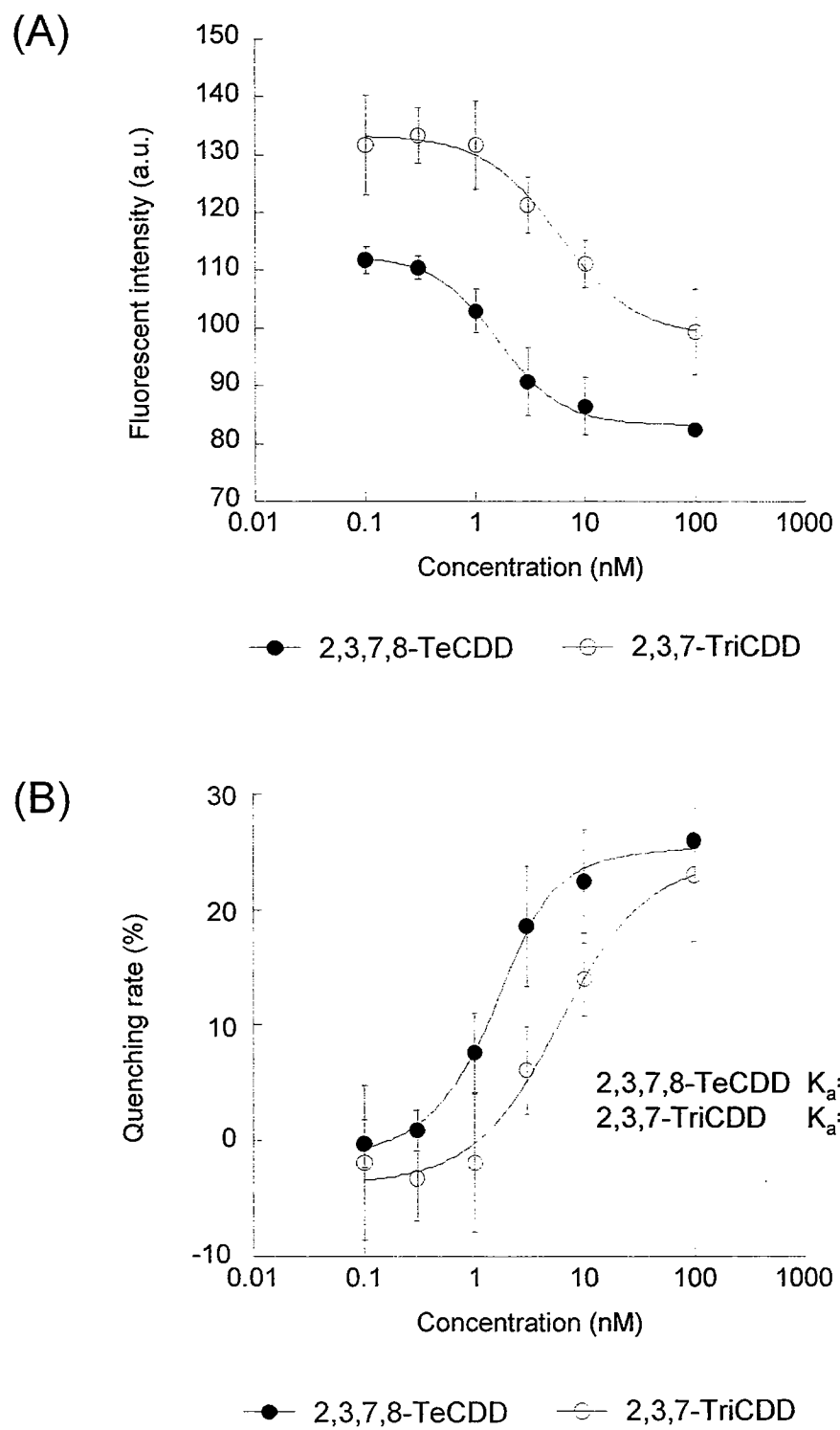


Fig. 6

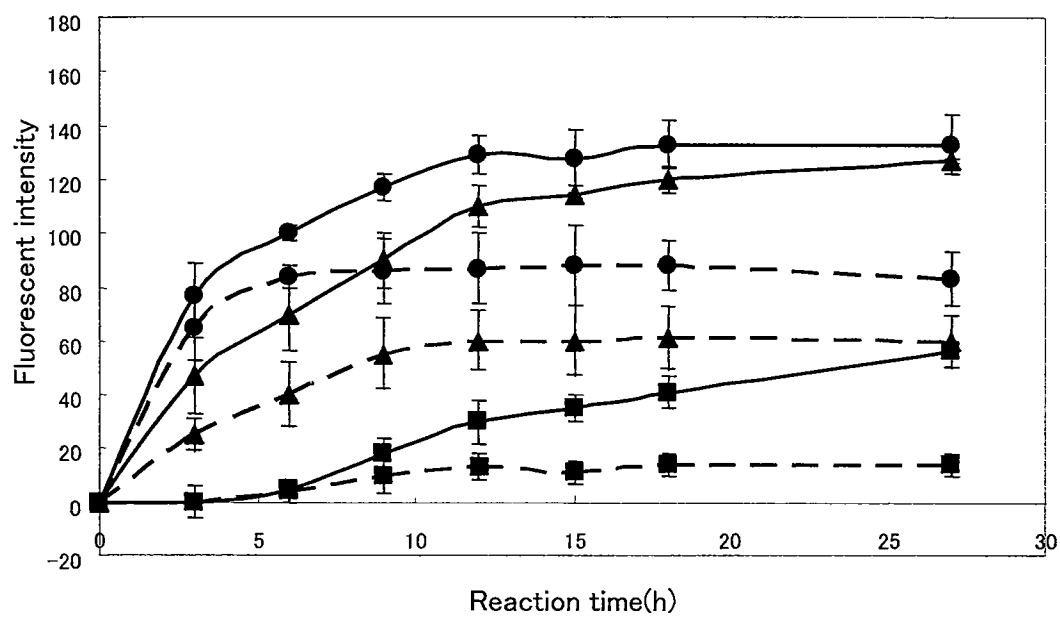
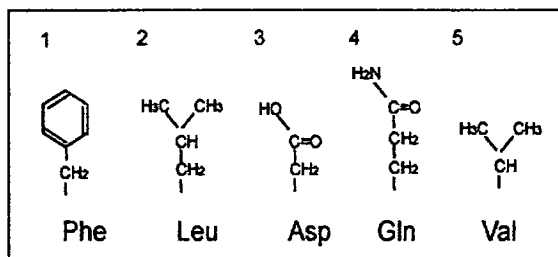


Fig. 7

structures of DB2 amino acid side chains



abbreviations

phenylalanine (Phe)
 1-naphthylalanine (Nal(1))
 cyclohexylalanine (Cha)
 phenylglycine (phg)
 valine (val)
 alanine (Ala)
 leucine (Leu)
 isoleucine (Ile)
 norvaline (Nva)
 norleucine (Nle)
 methionine (Met)
 aspartic acid (Asp)
 asparagine (Asn)
 glutamic acid (Glu)
 glutamine (Gln)

structures of substituted amino acid side chains

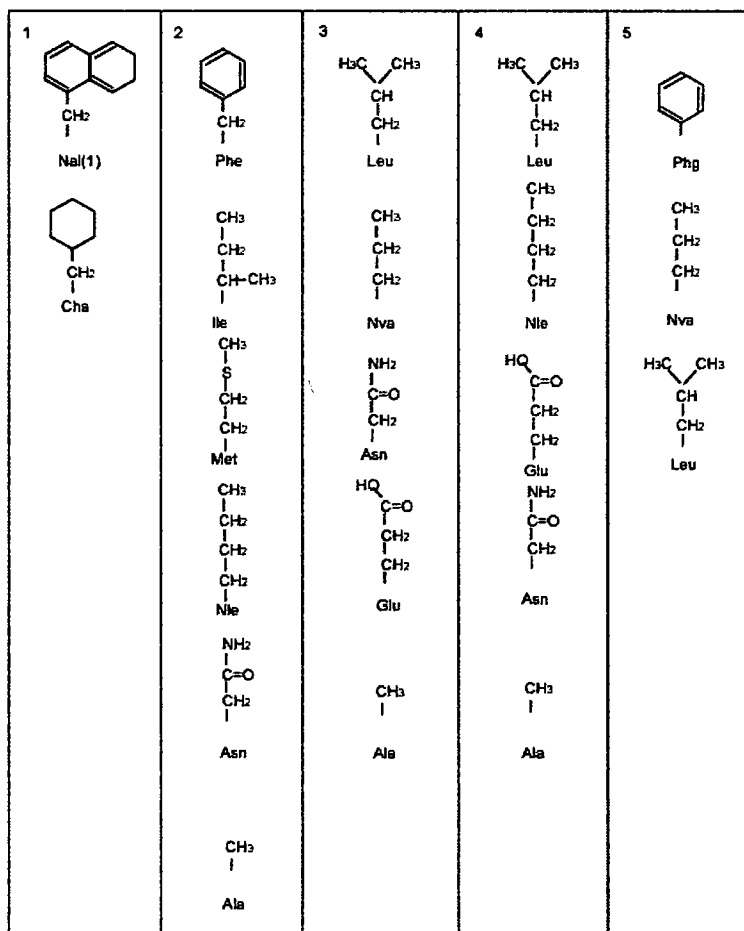


Fig. 8

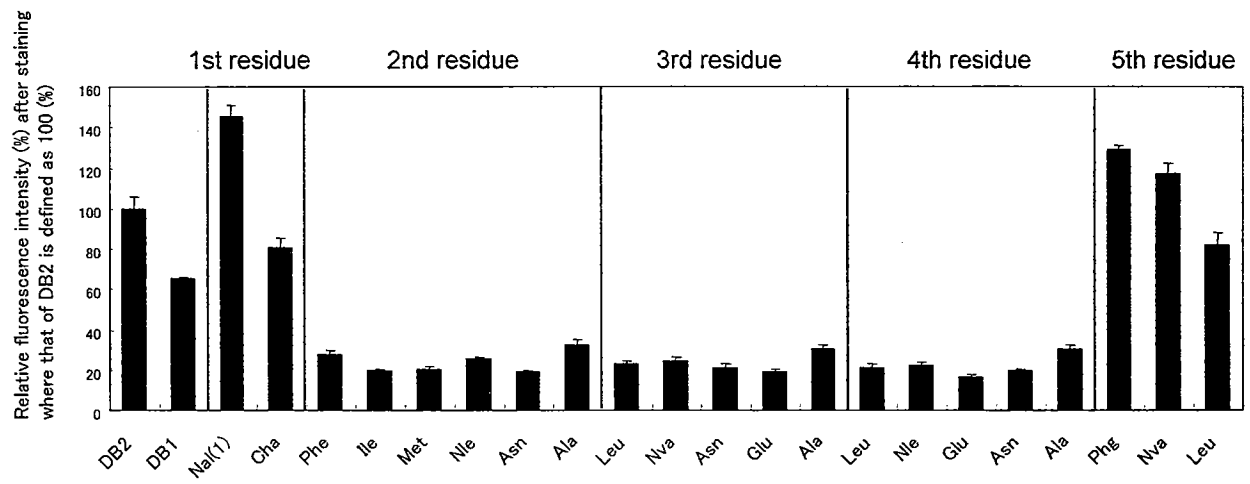


Fig. 9

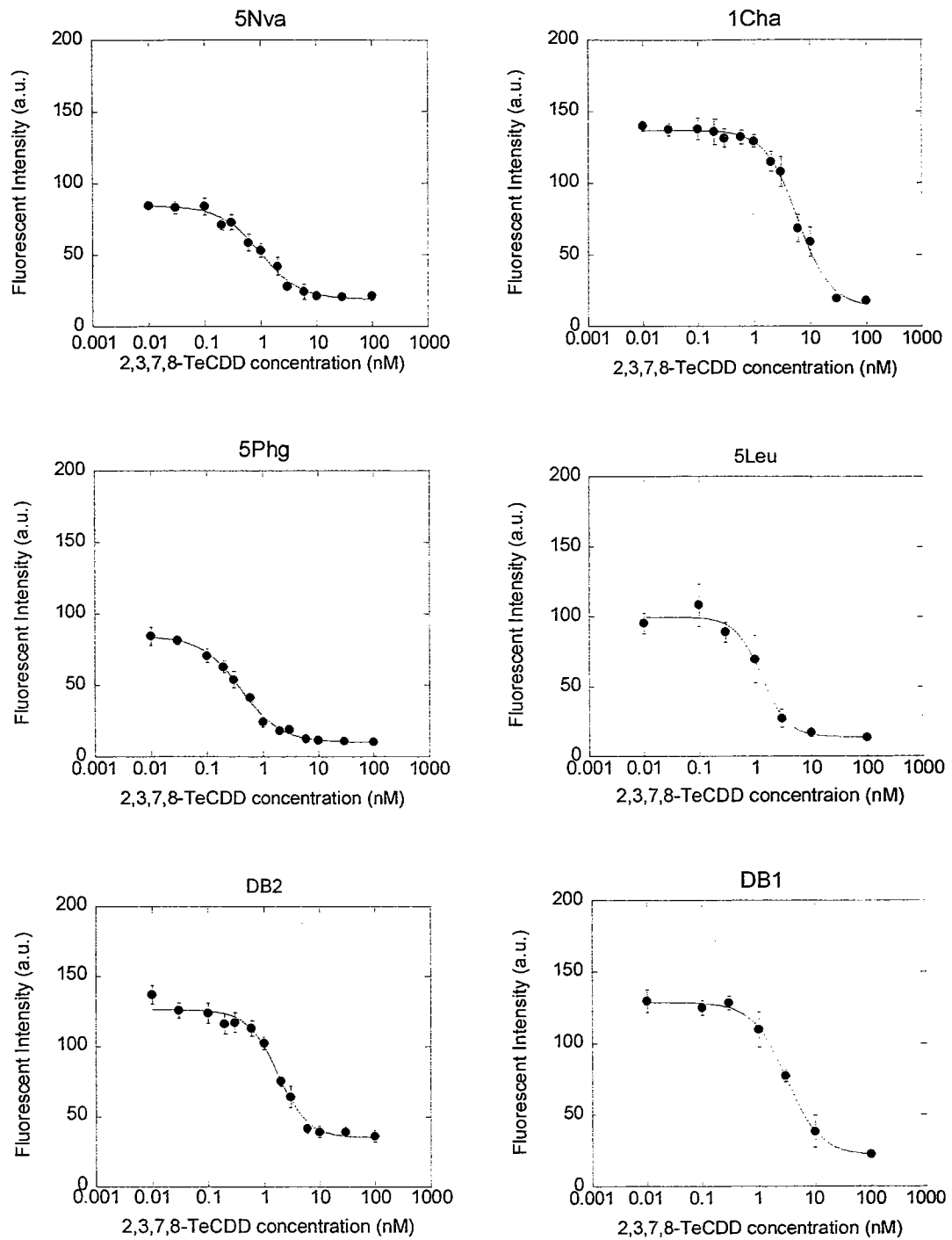
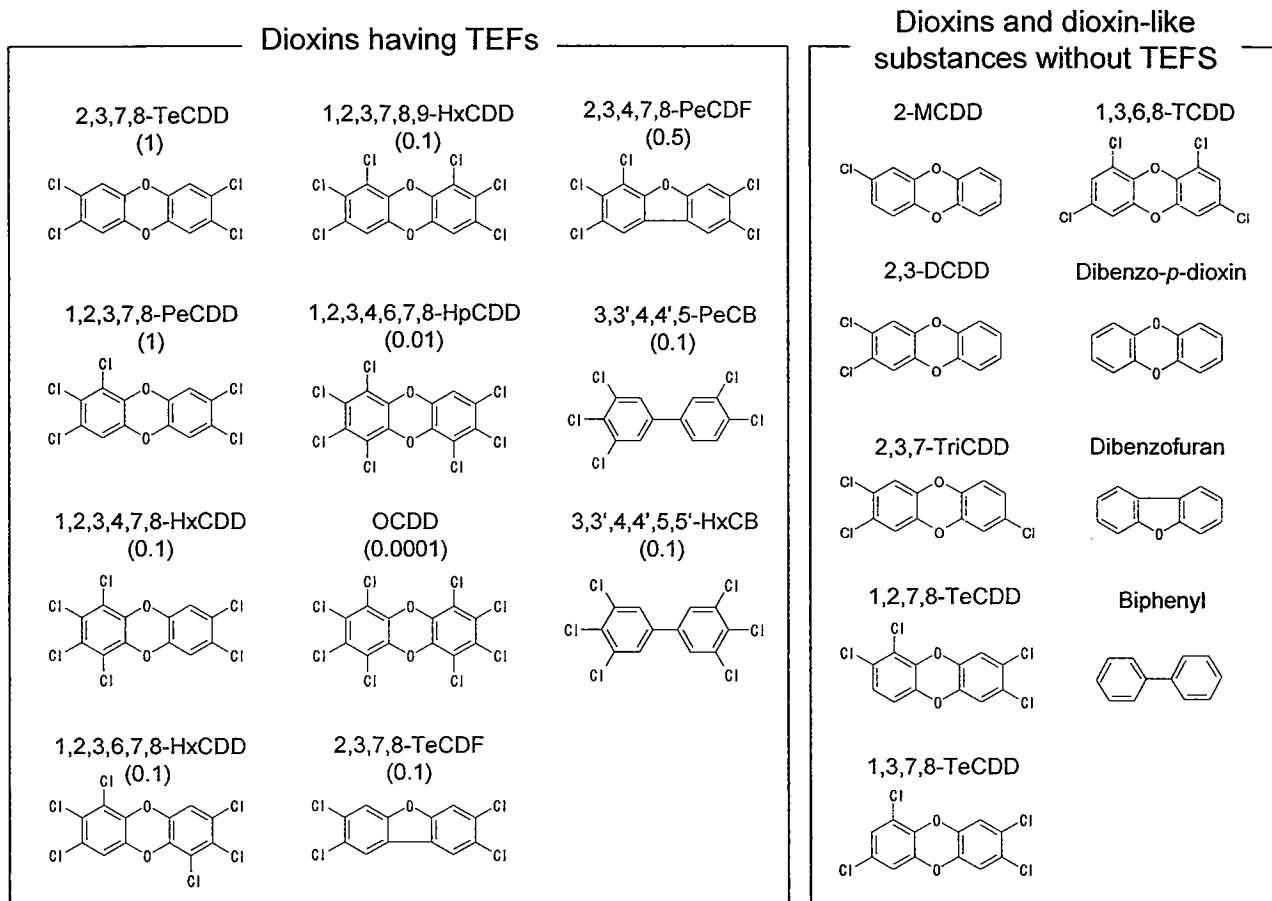


Fig. 10



Note) Numbers in parentheses indicate toxic equivalency factors

Fig. 11

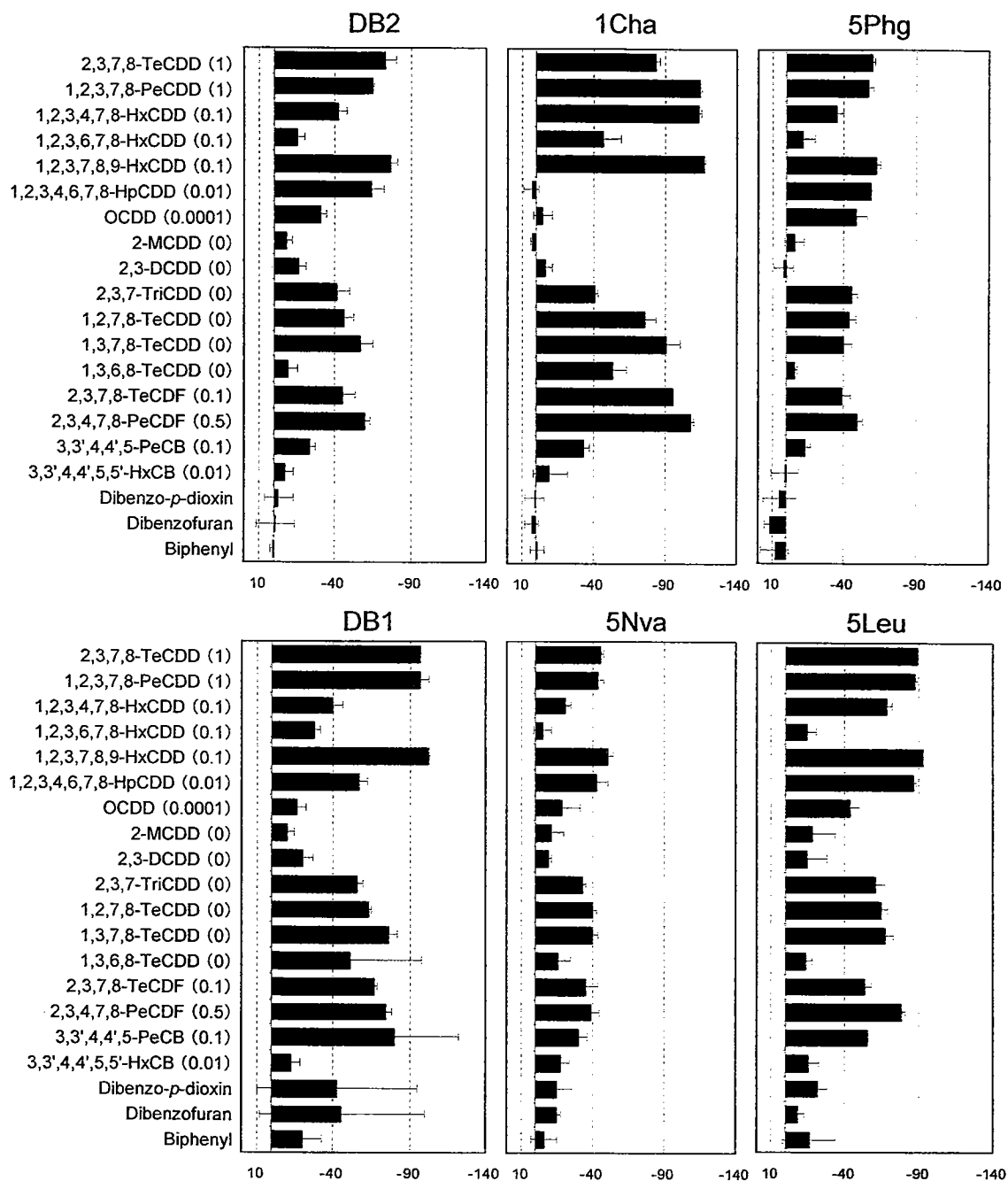


Fig. 12